

What is Claimed:

- 1 1. A compounding control method to prepare a compounded
2 mixture for use with at least one pharmaceutical compounding device having an
3 associated plurality of source solutions and a mixture receptacle, the method
4 comprising the steps of:
- 5 a) determining whether said plurality of source solutions conform to a
6 predetermined configuration;
- 7 b) at least one of providing an alert to an operator and preventing
8 compounding based on said determining step a);
- 9 c) determining respective expiration dates of said plurality of source
10 solutions;
- 11 d) at least one of providing a warning and preventing use of any of
12 said plurality of source solutions based on said determination step c);
- 13 e) accepting mixture inputs for one or more of said plurality of source
14 solutions; and
- 15 f) urging at least a portion of at least one of said plurality of source
16 solutions into said mixture receptacle based on said mixture inputs to form said
17 compounded mixture.

- 1 2. The method according to claim 1, further comprising the steps
2 of:

- 3 determining a nutritional assessment of a patient;
- 4 comparing said mixture inputs with said nutritional assessment; and
- 5 providing an output to a user based on said comparison.

- 1 3. The method according to claim 1, further comprising the steps
2 of:

3 determining if a lipid source solution and a dextrose source solution
4 one of immediately follow or immediately precede one another;

5 generating an alert to a user based on said determination; and

6 preventing further processing of the compounded mixture until at least
7 one buffer source solution is selected to be provided between said lipid source
8 solution and said dextrose source solution.

1 4. The method according to claim 1, further comprising the step of
2 generating a bar coded label based at least in part on a composition of the
3 compounded mixture in the mixture receptacle.

1 5. The method according to claim 1, further comprising the step of
2 selecting an infusion pump type for dispensing the compounded mixture prior to
3 beginning compounding the compounded mixture.

1 6. The method according to claim 5, further comprising the step of
2 selecting at least one of a ramp-up time and a ramp-down time for said infusion
3 pump.

1 7. The method according to claim 1, wherein said determining
2 step c) is based at least in part on a bar code scan of said source solution.

1 8. The method according to claim 1, wherein said urging step f) is
2 based at least in part on a proportional-integral-derivative (PID) control of a pump
3 element of said compounding device.

1 9. The method according to claim 1, further comprising the steps
2 of:

3 receiving an input signal from a pump element of the compounding
4 device indicative of pump motor speed error; and

5 sending an output correction signal to said pump element to
6 compensate for said motor speed error.

1 10. The method according to claim 9, further comprising the steps
2 of:

3 determining a direction of rotation of at least a portion of said pump
4 element;

5 comparing said direction to a desired direction of rotation; and

6 setting an alarm condition based on said comparison.

1 11. The method according to claim 1, further comprising the steps
2 of:

3 determining a state of motion of a plurality of pump elements of said
4 compounding device;

5 generating a first alert signal if any of said plurality of pump elements
6 are in a state of motion that should otherwise be stationary, said alert advising of a
7 defective compounded mixture; and

8 generating a second alert signal if any of said plurality of pump
9 elements are in a stationary state that should otherwise be in motion.

1 12. The method according to claim 1, further comprising the steps
2 of:

3 determining if selection of said source solutions may form an insoluble
4 precipitate; and

5 generating an alert signal based on said comparison.

1 13. The method according to claim 1, further comprising the step
2 of:

3 generating a label comprising indicia indicative of attributes of said
4 compounded mixture.

1 14. The method according to claim 1, wherein said mixture inputs
2 are received via a touch screen display.

1 15. The method according to claim 14, further comprising the step
2 of selectively deactivating a tactile input of said touch screen display for a
3 predetermined period to allow for cleaning of a surface of said touch screen display.

1 16. The method according to claim 1, further comprising the steps
2 of:

3 advising a user of at least one of maintenance procedures and
4 replacement of component parts of the compounder device;

5 receiving input from said user responsive to said advising step; and

6 preventing further processing of said compounded mixture until said
7 input from said user indicates compliance with said advising step.

1 17. The method according to claim 1, further comprising the steps
2 of:

3 providing the user with an inventory of mixture receptacles for
4 selection;

5 receiving a input from the user for selecting a desired mixture
6 receptacle;

7 comparing said selection with a volume of said desired compounded
8 mixture based on said mixture inputs of step e); and

9 generating an alert to said user if said volume of said desired
10 compounded mixture exceeds a volume of said selected mixture receptacle and
11 preventing further processing until an alternate selection of a mixture receptacle is
12 made that will accommodate said compounded mixture.

1 18. The method according to claim 1, further comprising the steps
2 of:

3 determining if a plurality of said compounded mixture are to be
4 prepared;

5 determining if any of a plurality of additive solutions are to be part of
6 said compounded mixture;

7 determining if any of said plurality of additive solutions may be pooled
8 into a pooled additive solution;

9 urging at least one of said plurality of additive solutions into a pooled
10 additive solution container; and

11 designating said pooled additive solution as a further source solution
12 for preparation of said compounded mixture.

1 19. The method according to claim 1, wherein the urging step
2 further comprising the steps of:

3 determining if a container of any of said source solutions dictate a low
4 flow rate; and

5 setting said urging for said source solution to have a reduced upper
6 speed limit based on said determining step in order to prevent a false flow rate alarm
7 condition.

1 20. A compounding control method to prepare a compounded
2 mixture for use with at least one pharmaceutical compounding device having an
3 associated plurality of source solutions and a mixture receptacle, the method
4 comprising the steps of:

5 a) determining whether said plurality of source solutions conform to a
6 predetermined configuration;

7 b) at least one of providing an alert to an operator and preventing
8 compounding based on said determining step a);

- 9 c) determining respective expiration dates of said plurality of source
10 solutions;
- 11 d) preventing use of any of said plurality of source solutions based on
12 said determination step c);
- 13 e) determining if a plurality of compounded mixtures are to be
14 prepared;
- 15 f) determining if any of a plurality of additive solutions are to be part
16 of said compounded mixture;
- 17 g) determining if any of said plurality of additive solutions may be
18 pooled into a pooled additive solution;
- 19 h) urging at least one of said plurality of additive solutions into a
20 pooled additive solution container based on said determining step g);
- 21 i) designating said pooled additive solution as a further source
22 solution;
- 23 j) accepting mixture inputs for one or more of said plurality of source
24 solutions; and
- 25 k) urging at least a portion of at least one of said plurality of source
26 solutions into said mixture receptacle based on said mixture inputs to form said
27 compounded mixture.

1 21. A compounding control system for preparing a compounded
2 mixture for use with at least one pharmaceutical compounding device having an
3 associated plurality of source solutions and a mixture receptacle, the system
4 comprising:

5 first determining means for determining whether said plurality of
6 source solutions conform to a predetermined configuration;

7 means for generating at least one of an alert to an operator and
8 preventing compounding based on an output of said first determining means;

9 second determining means for determining respective expiration dates
10 of said plurality of source solutions;

11 means for preventing use of any of said plurality of source solutions
12 based on an output of said second determining means;

13 input means accepting mixture inputs for one or more of said plurality
14 of source solutions; and

15 pumping-means for pumping at least a portion of at least one of said
16 plurality of source solutions into said mixture receptacle based on said mixture inputs
17 to form said compounded mixture.